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A CANOE TRIP IN THE TEN THOUSAND ISLANDS TO COLLECT LIGUUS

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For about sixty miles along Florida's lower southwest coast and extending for some distance inland there is a vast almost unexplored region called the Ten Thousand Islands. The great everglade swamp which lies just to the north drains into the Gulf through this low area and in so doing has created the most intricate and baffling maze of mangrove islands and waterways imaginable. Extending to the south is Cape Sable, the most southerly point on the Florida mainland.

To the *Liguus* collector the region presents many hazards. It is only too easy to become hopelessly lost in this natural labyrinth. Oyster-bars lurk just beneath the surface and cannot be seen because of the "black-water" of the mangrove country. Mosquitoes are so numerous that cases of death by mosquito-bite have been recorded, while Cape Sable is reputed to be a haven for rattlesnakes. Apparently nature has done everything in her power to discourage the would-be collector.

After considerable planning my brother Tom and I started out from the little town of Everglades with a heavily laden canoe. In her we had stowed a little tent and mosquito-bar along with food and fresh water enough to last a month, for once we were "in" no more could be had at any price. Then, too, our little outboard-motor needed a supply of fuel. With care, there was room for it all, and although the canoe rode quite low in the water she seemed very steady.

Out on Chokoloskee Bay a brisk wind was chopping things up a bit but we made Chokoloskee Key with only a little water splashed into the boat. After landing upon the southern shore

of the Key a search for *Liguus* was soon in progress. These shells proved to be quite scarce.

The *Oxystyla floridensis*, giant ones lived here, were almost entirely killed by the frosts of this very cold winter. They were still fastened to the trees and in a stage of considerable putrefaction but science must be appeased so we took them just the same. Some of the young ones were still living and these were left to rebuild the colony.

This Key is well covered by scattered "shell-mounds." These strange elevations are rather common throughout the region and are believed to be the rubbish heaps of a prehistoric people who once inhabited these islands. How they ever ate so many shellfish is inconceivable for some of the mounds cover acres. Sometimes they are built in long parallel rows, again they may be in a series of individual hills. On Russel's Key we saw huge pits formed by the mounds which may have been used to collect rain-water. There is a mound near the northern shore of Chokoloskee Key which must be all of fifty feet high. Believe me, that made a lot of oyster stew! A perfunctory search disclosed no implements except the large *Fasciolaria* shells which had been drilled by human hands to take a stick, thus making a sort of primitive garden tool, I suppose.

If the reader is familiar with the mangrove tree he will appreciate the fact that camping upon mangrove islands is impossible, for the roots are actually in the water. Practically the only dry land available for camping is that afforded by these strange piles of refuse. Each day we studied our navigation charts and formulated a schedule which would bring us to a convenient "shell-mound" before nightfall. The larger shells under one's ground-cloth at night seemed to have the peculiar faculty of imprinting upon various parts of one's anatomy quite perfect replicas of their outlines, if you know what I mean.

Since the hammock which supports a growth of either *Liguus* or *Oxystyla* is to be found only upon these peculiar mounds we presume that all of the tree-snails have been introduced since the mound-builders finished their work.

Before leaving Chokoloskee Key we made the acquaintance of a kindly old native known as "Uncle Dick" who presented us

with a "blowing-conch." It was the familiar *Fasciolaria gigantea* with the tip broken off. It is said that its booming note can be heard for a distance of five miles on a clear day. Blown as a bugle, the noise is terrific at close range, although the energy needed to blow it is equally tremendous.

That night we camped upon a shell-mound about a mile up the Turner River. It rained in the night and then turned decidedly cold. Our tent kept out the mosquitoes much better than the rain, we learned.

In the morning, after thawing out by downing several steaming cups of coffee, we started to collect upon the nearby mound for tree-snails. The *Liguus* were very large but decidedly uncommon.

That afternoon we returned to the Bay and after considerable difficulty succeeded in navigating the treacherous shoals and oyster-bars which effectively block the entrance to the Lopez River. Dry land was found about two miles up the river. No doubt it was the only higher ground about, for the remains of an old house were still standing, little but foundation and two cisterns of concrete remaining. In the larger cistern was a goodly quantity of slimy water that reeked with the stench of two raccoons which had in some way fallen into the water and drowned. Built up in front of one of the cisterns was a concrete device bedded into the ground resembling an oblong aquarium such as is sometimes seen on lawns. Roughly scratched into the cement when still soft could be read the inscription "Jael Lopes Born Apr. 20, 1892." No date as to death was recorded but doubtless it is a grave. Never have I seen a lonelier looking one. May Jael's soul rest here in peace.

We camped not far away and upon scratching under the grass found the old familiar shells. This was a "shell mound" which for some reason had only been started. Nevertheless, we were grateful to the mound-builders for it was a little higher than the nearby mangrove swamp and quite dry. Dinner was prepared over a hurriedly built camp fire for it is wise to seek the seclusion of one's tent and mosquito-bar before dark because the bugs come like an invading army with the sundown.

There were many strange sounds in the clear cold air of the night. It seemed that the ever present hooting of the owls was ghostlier than ever. Perhaps the close proximity to the lonely grave had something to do with that.

Upon breaking camp in the morning we continued upon our way up the Lopez River to Cross Bay and then through to Sunday Bay. Near the southern end we at last saw a human being. He was an old 'coon-hunter staying upon a tiny houseboat with a barrel of water, almost as large as the boat, mounted in the stern.

As we buzzed along the noise of our motor frightened countless wild birds into flight. There were many little Florida duck along with the slow starting herons, and numerous graceful ibis, to say nothing of the grotesque pelican and the dainty white egret. This country is indeed a paradise for the bird-lover.

The wind had come up in the afternoon and delayed us in reaching a new camp site. Once in the Chatham River, we hastened, for dusk was almost upon us. As we rounded a bend, there before our eyes stood a good sized frame house with cocoa-nut palms all around it. What a start it gave us to come so suddenly upon this unexpected sign of habitation.

We camped for the night upon dry land not far from the house, another "shell-mound," to be sure. It is said that the former owner of this little plantation had made a practice of importing negro labor, which if unsatisfactory was simply done away with. The story goes that fifteen skeletons were found upon the premises when the law finally caught up with "Mr. Bluebeard" a few years ago.

In the morning we left the river and headed the little canoe southward in the Gulf of Mexico. It was a bit rough but by exercising care we made out all right. Since our supply of syrup for pancakes had been depleted it was decided to inquire at the clam-dredge working near Plover Key as to our chances of replenishing the larder. This giant dredge supplies the canning-plant at Marco. Such a terrific noise she makes while operating! By shouting at the top of our lungs we told of our plight and one of the men ran off to see the cook. A little later he returned with a partly filled can of syrup which he presented to us, saying he

was sorry they couldn't spare more. No pay was acceptable, but perhaps our appearances had something to do with that. Hugging an outboard-motor day after day certainly doesn't add to one's natty appearance. An adult and a young clam, *Venus mercenaria*, were most acceptable as souvenirs and now have a place in the McGinty collection.

Camp was established upon Highland Point, Lossman's Key, and several days spent in searching for hammocks in the interior. The Point, with a long sandy shore and a very gradual beach, offered greater possibilities to the collector of marine shells. The shallow water swarmed with molluscan life. Fine specimens of the striking crown shell, *Melongena corona*, were everywhere, while in the deeper water that giant of giants, *Fasciolaria gigantea*, with its great blood-red foot fully extended, was searching for living prey.

At night the sand-gnats came through our mosquito-bar and forced us to cover our heads like so many turtles.

A run up the nearby Rodgers River was one of the highlights of the expedition. It was quite narrow and very winding. The river-bank seemed higher here and supported a growth of slender Florida palms which added their grace to the scenery. Around each bend birds would hurriedly take to flight and there was constantly something new to be seen. Off to the left, after we had gone several miles up the river, occasional glimpses of saw-grass prairie were revealed. Here, before our eyes, was being unfolded the real Florida wilds, unspoiled by man! From the Rodgers River we entered Rodgers River Bay and eventually reached the Lossmans River, then out to the Gulf again. A glorious excursion, approximately 20 miles, all told.

Finally we were ready to start on the run for Cape Sable, some 25 miles to the southeast. Upon rounding Shark Point, just north of Ponce de Leon Bay, the sea began to pick up. It was just about all the canoe could stand, for going along with the motor turning at its slowest speed we continued to ship water. For a while we felt a bit squeamish, especially when shark fins were lazily cutting through the water all about our boat. To attempt to "turn about" would surely have put us over and since it was impossible to land because of the mangrove roots

along the shore, we had to keep going. Those sharks seemed to be awfully patient and kept right with us, no doubt waiting for us to turn over. This is a thrill which indeed adds to the zest of conchology.

We eventually made the large Ponce de Leon Bay and breathed more easily. With a pause to bail out the inch and a half or so of water in the canoe, we ran on across the bay, keeping close in to view the giant mangrove trees. A famous botanist stated once in a lecture that he had travelled all over the world collecting botanical specimens but had never seen mangrove trees of such size as these!

At last, before our eyes stretched the sandy beach of Cape Sable! Those Cape Sable *Liguus* had waited a long time for us to come, but now, here we were. Camp was established on Middle Cape, for should the wind become too much for the canoe we could walk the six miles either way to the next cape, that is, Northwest or East Cape.

That night we must have frightened a giant panther prowling near the tent. There was a blood-curdling scream and some large animal bounded off into the night. In the morning we found his tracks upon the soft sand, he surely had been a big one. There were multitudes of other tracks, raccoons and wildcats had been well represented.

If you have ever read Dr. Charles T. Simpson's "In Lower Florida Wilds" and studied his chapter devoted to describing Cape Sable you will appreciate how we felt about the rattlesnakes of the Cape. He implies that they are the largest and most numerous of all Florida! I confess that I trod very gingerly for the next few days and constantly imagined that I could feel those awful fangs fastening upon one of my legs.

There is only a very narrow fringe of hammock at Cape Sable and the tree-snails were far from plentiful. After an exhaustive search upon Middle Cape a very few of the rare *Liguus crenatus marmoratus*, dark colored shells, were taken. These we especially wanted for the collection. Along with the other forms of *Liguus* found were a few very large specimens of *Oxystyla floridensis*. It is interesting to note that while the *Oxystyla* were also taken from East Cape, none were found at Northwest Cape.

At East Cape some very beautiful *Liguus fasciatus roseatus* were taken but they were quite scarce. The mosquitoes were terrific in the hammocks of all three capes.

At Northwest Cape we struck a pure colony of white *Liguus*. This form is supposed to be *Liguus crenatus capensis* and one of its distinguishing characteristics is an elongated shape. Ours did not run very true to form and lacked the green lines usually associated with this variety.

There is a beautiful sandy beach along Cape Sable but the marine collecting was a bit disappointing. "Angel-wings" were plentiful but mostly broken or otherwise imperfect.

The day we left on the home trip a large and very peculiar fish was seen at the surface near Middle Cape. Later, we identified it to our own satisfaction as the exceedingly rare "whale-shark," the largest known fish.

Numerous side trips were made including an unsuccessful attempt to catch a tarpon in the Little Shark River, where it is said they may be had at any season of the year. We went up the Shark and Harney Rivers but found no likely places for tree-snails. The return trip from then on was made all the way in the Gulf of Mexico. When it became too rough to "run" we were obliged to camp and wait for calmer weather; fortunately luck was with us.

Russell's Key, about four miles southwest of the town of Everglades, was visited and many *Liguus fasciatus lineolatus* were observed. Never had we seen *Liguus* so plentiful as here. A number of giant specimens were taken for the collection. Sandgnats were a pestilence at this place.

The trip was over. We had done what many had told us could not be done. We had been deep into the Ten Thousand Island country of Florida without any guide and had successfully navigated a canoe in the open Gulf of Mexico. Our little craft had carried us safely back after a cruise lasting slightly over three weeks, in which we had covered some three hundred miles of water. For years we had talked of making just such a trip, for it is one of the few absolutely virgin regions left in the United States today. It was our pleasure to see it before it has been spoiled by civilization as it will probably some day be, for tarpon

bring the so-called sportsman, and he brings death and destruction to the wild life wherever he goes. Then, too, we have some very nice specimens of shells to add to the collection, splendid souvenirs of our trip for many years to come, and after all that was the real reason for our adventure.

COLLECTING MOLLUSCA ON THE IRANIAN PLATEAU

BY H. E. J. BIGGS

Little has been written on the Mollusca of the Iranian Plateau. This was perhaps due to the inaccessibility of the interior in the past when the only method of traveling was by caravan. Now this is replaced by motor transport. On the other hand the old method of traveling was good for collecting. In 1922 I made a journey on mules from Ahwaz in the south-west, through Isfahan and Yezd, to Kerman. In more recent years I have traveled several times by lorry from Kerman to Isfahan, from Kerman to Bunder Abbas and from Kerman to Bushire *via* Sirjan and Shiraz. Several summer holidays have been spent in the mountains round Kerman and Yezd and the results may be of some interest.

Zoogeographically Iran lies within the Palaeartic Region. It is in the center of that great belt of deserts which extend from the Atlantic coast of Africa to the eastern side of China, and at the point of change from the hot desert area (Sahara and Arabia) to the temperate area (Turkestan). It also touches the Ethiopian Region on the south-west and the Oriental Region on the south-east. I have collected in the Caspian province of Gilan but its flora and fauna are distinct from those of the high arid plateau. Jagged barren mountain ranges separated by open stony plains covered with low scrub are the characteristic features of this area. Villages are few and far between, sometimes nestling in a mountain valley near a spring, sometimes isolated in the middle of a plain where a qanat (underground water-course) comes to the surface.

To the best of my knowledge the only systematic collecting done in our area was that of Count Doria of the Italian Mission,